

CLAIMS

1. A beverage apparatus that is operable by at least one of a domestic AC voltage and a foreign AC voltage, the beverage apparatus comprising:
a heating element coupled directly to the at least one of the AC voltage and the foreign AC voltage;
a power supply having an input that couples directly to the at least one of the domestic AC voltage; and the foreign AC voltage the power domestically and that couples directly to the foreign AC voltage if the beverage heating apparatus is operated in a foreign country, the power supply having a DC voltage output of substantially a predetermined value regardless of whether the input is coupled to the domestic AC voltage or the foreign AC voltage, and
a controller coupled to the DC voltage output to receive power from the power supply, the controller being configured to control the operation of the heating element.
2. The beverage apparatus of claim 1, wherein the controller comprises a switch that is closeable to apply the domestic AC voltage to the heating element if the beverage apparatus is operated domestically and to apply the foreign AC voltage to the heating element if the beverage heating apparatus is operated in a foreign country.
3. The beverage apparatus of claim 2, wherein the controller comprises a processor that signals the switch to close the switch.
4. The beverage apparatus of claim 2, wherein the switch comprises a triac.
5. The beverage apparatus of claim 1, further comprising a solenoid to which the DC voltage output of the power supply is coupled.
6. The beverage apparatus of claim 5, wherein the solenoid is operable to dispense a beverage.
7. The beverage apparatus of claim 1, further comprising a valve to which the DC voltage output of the power supply is coupled.
8. The beverage apparatus of claim 7, wherein the valve is operable to dispense a beverage concentrate.

9. The beverage apparatus of claim 1, further comprising a pump to which the DC voltage output of the power supply is coupled.

10. The beverage apparatus of claim 9, wherein the pump is operable to move a beverage concentrate.

11. The beverage apparatus of claim 1, further comprising a sensor to which is coupled a signal derived from the DC voltage output of the power supply.

12. The beverage apparatus of claim 11, further comprising a pump having a rotatable shaft and the sensor senses a speed at which the shaft rotates.

13. The beverage apparatus of claim 11, the apparatus further comprising a heated water tank, the treating element being operatively associated with the heated water tank for heating water retained in the tank, wherein the sensor senses a temperature of the heated element being operatively associated with the heated water tank for heating water retained in the tank wherein the sensor senses a temperature of the heated water.

14. The beverage apparatus of claim 11, further comprising a cooling cabinet and the sensor senses a temperature of a portion of the cooling cabinet.

15. The beverage apparatus of claim 11, further comprising a heat sink and the sensor senses a temperature of a portion of the heat sink.

16. The beverage apparatus of claim 11, wherein the sensor comprises a conductance sensor.

17. The beverage apparatus of claim 1, further comprising a fan to which the DC voltage output of the power supply is coupled.

18. The beverage apparatus of claim 17, further comprising a cooling cabinet that is cooled by the fan.

19. The beverage apparatus of claim 17, further comprising a heat sink that is cooled by the fan.

20. The beverage apparatus of claim 1, further comprising a motor to which the DC voltage output of the power supply is coupled.

21. The beverage apparatus of claim 1, further comprising a display to which the DC voltage output of the power supply is coupled.

22. The beverage apparatus of claim 1, further comprising a light to which the DC voltage output of the power supply is coupled.

23. The beverage apparatus of claim 1, further comprising an alarm to which the DC voltage output of the power supply is coupled.

24. The beverage apparatus of claim 1, further comprising an auxiliary power supply configured to convert the DC voltage output of the power supply to another power supply voltage.

25. A beverage heating apparatus that is operable either by a domestic AC voltage or by a foreign AC voltage, the beverage heating apparatus comprising:

a container for retaining a liquid to be heated;

a heating element coupled directly to the domestic AC voltage when the beverage heating apparatus is operated domestically and coupled directly to the foreign AC voltage when the beverage heating apparatus is operated in a foreign country, the heating element being operable to heat the liquid retained in the container;

a power supply having an input that coupled directly to the domestic AC voltage when the beverage heating apparatus is operated domestically and coupled directly to the foreign AC voltage when the beverage heating apparatus is operated in a foreign country, the power supply having a DC voltage output of substantially a predetermined value regardless of whether the input is coupled to the domestic AC voltage or the foreign AC voltage; and

a controller coupled to the DC voltage output to receive power from the power supply.

26. The beverage heating apparatus of claim 25, further comprising a temperature sensor that is coupled to the controller and that provides a signal to the controller which is indicative of a temperature of the liquid in the container.

27. The beverage heating apparatus of claim 25, further comprising a switch coupled to controller and coupled to the heating element, the controller opening and closing the switch to control heating of the liquid in the container, the domestic AC voltage being applied to the heating element when the switch is closed when the beverage heating apparatus is operated domestically, and the foreign AC

voltage being applied to the heating element when the switch is closed when the beverage heating apparatus is operated in a foreign country.

28. The beverage heating apparatus of claim 25, further comprising a dispensing valve and a refill valve, the dispensing solenoid being coupled to the controller and openable to allow the liquid to flow out of the container, and the refill valve being coupled to the controller and openable to allow the container to be refilled automatically after a predetermined amount of liquid has been dispensed from the container.

29. A method of heating a liquid using an apparatus that is operable by a supply voltage that is either a domestic AC voltage or a foreign AC voltage, the method comprising:

- providing a container for retaining a liquid to be heated; providing a heating element;

- coupling the heating element directly to the supply voltage regardless of whether the supply voltage is the domestic AC voltage or the foreign AC voltage;

- providing a power supply capable of receiving a variety of input voltages;

- coupling an input of the power supply directly to the supply voltage regardless of whether the supply voltage is the domestic AC voltage or the foreign AC voltage;

- providing a DC output from the power supply;

- providing a controller; coupling the controller to the DC output from the power supply;

- operating user inputs to signal the controller coupled to the DC voltage output to control the operation of the heating element to heat liquid contained in a container.